Biochemistry and Clinical Biochemistry

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Permanent/temporary staff ratio: 5/4
(2 PO, 1PA, 2 RTD-B, 1 research fellow, 1 visiting researcher, 2 PhD students)

School of Biosciences and Veterinary Medicine

Research Day UNICAM
Camerino 12 dicembre 2024

Research activities

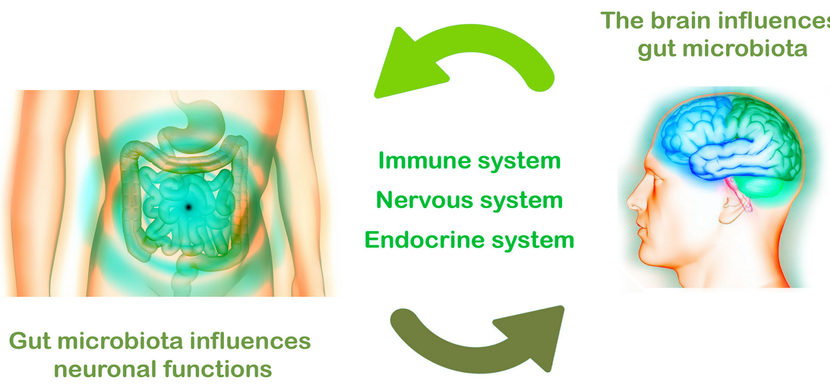
R1. Modulation of the gut-brain axis to promote healthy aging and counteract the onset/progression of neurodegenerations.

R2. Development and functional characterization of multi-target directed semi-synthetic anticancer molecules.

R3. Characterization of the role of wheat proteins and their oxidative modifications in wheat sensitivity.

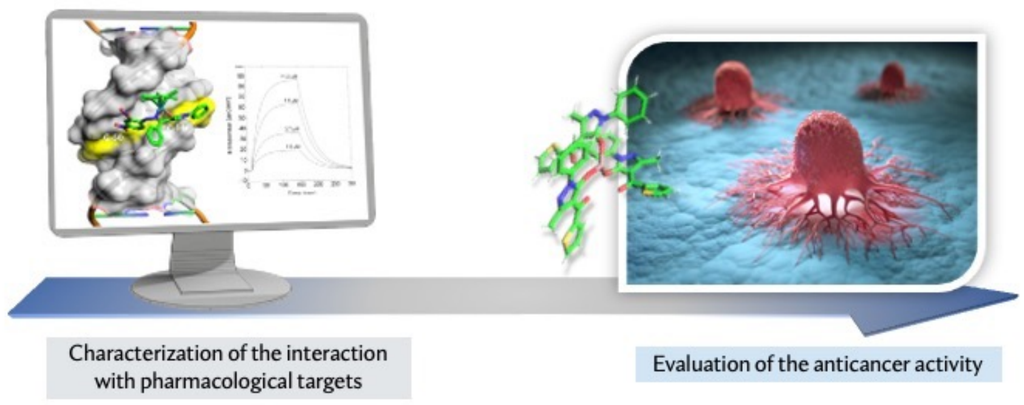
Impact of the research

R1. The development of new and innovative strategies to promote healthy aging and reduce the risk of age-related diseases will contribute to ameliorate the quality of life in the elderly and to limit the costs associated with healthcare.



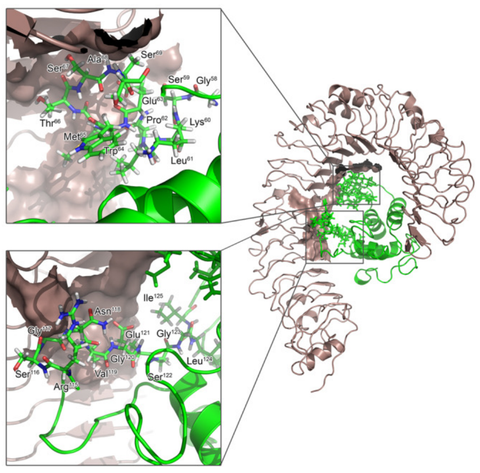
Changes in the composition and diversity of the intestinal microbiota can impact behavior and neuronal function in both disease states and in health.

R2. Multi-target anticancer drugs can enhance treatment efficacy, reduce drug resistance, by enabling simultaneous targeting of multiple pathways critical for tumor growth and survival.



From virtual screening to cell-based evaluation of anticancer potential.

R3. The in-depth characterization of specific protein triggers of non-celiac wheat sensitivity can pave the way for targeted dietary interventions and treatments.



Wheat amylase trypsin inhibitors drive intestinal inflammation via activation of toll-like receptor 4.

National and international collaborations

- Department of Molecular and Translational Medicine, Section of Pharmacology, University of Brescia.
- Università Politecnica delle Marche and Azienda Ospedaliero Universitaria delle Marche, Ancona.
- Institut des Sciences et Ingénierie Chimiques, École Polytechnique Fédérale de Lausanne, Switzerland.
- Dipartimento Politecnico di Ingegneria e Architettura, University of Udine.
- Dipartimento di Medicina, University of Verona.
- San Raffaele Open University, Roma.
- Pennington Biomedical Research Center, Louisiana State University.
- Department of Small Animal Clinical Sciences, TEXAS A&M University.
- School of Medicine, University of California, San Diego.
- Department of Pharmacology and Toxicology, Medical University of Lodz, Lodz, Poland.
- Dipartimento di Scienze del Farmaco Università degli Studi del Piemonte Orientale «Amedeo Avogadro».
- Dipartimento di Scienze Mediche, Università di Torino.

Membership in Scientific and Research networks

- International Natural products Sciences Taskforce (INPST)
- SiBioC (Italian Society of Clinical Biochemistry and Clinical Molecular Biology)
- European Federation of Clinical Chemistry and Laboratory Medicine (EFLM)
- Unicam Center for Neuroscience
- Fondazione di Medicina Molecolare e Terapia Cellulare (UnivPM)

Fundings

- Ministerial (MUR *Prin, NextGeneration EU-program, IZS RC*)
- Private donations

Relation with SME

- CEINGE Biotecnologie avanzate, Napoli
- Istituto Zooprofilattico Sperimentale dell'Umbria e delle Marche, Perugia, Italy
- Mendes SA - Switzerland
- Ormendes SA - Switzerland